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SYNOPSIS OF THE DISEASES

OF THE

LARYNX, LUNGS, AND HEART

COMPRISING

DR EDWARDS' TABLES ON THE EXAMINATION OF THE CHEST

WITH

ALTERATIONS AND ADDITIONS

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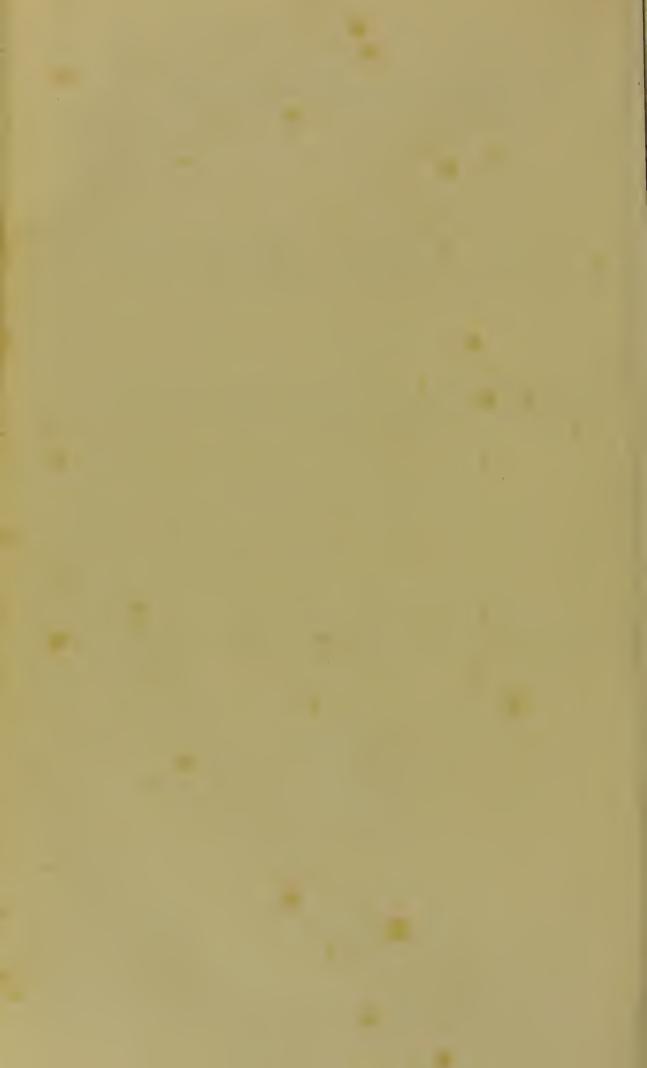
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PREFACE

The valuable tables "On the Examination of the Chest," drawn up by the late Dr. Edwards, of St. Bartholomew's Hospital, having been out of print for several years his executors kindly gave me permission to make what use I pleased of them. In the present edition are comprised all the original tables, with such alterations as were deemed necessary, together with additional tables on the Diseases of the Larynx, Heart, &c.

The two charts on Aortic and Mitral Disease are inserted by the kind permission of Dr. Andrew.

F. DE HAVILLAND HALL.

QUEEN ANNE STREET;

January, 1878.

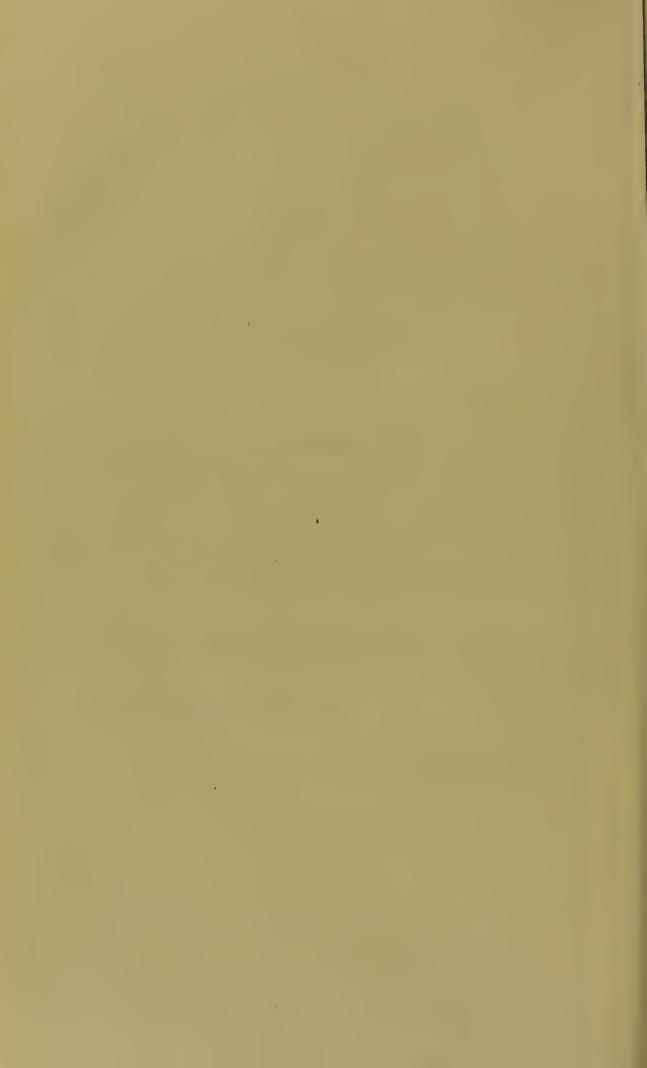


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^{*} These tables are not in Dr. Edwards' book, the others are the original tables with modifications and alterations.



I.—SYMPTOMS OF LARYNGEAL DISEASES.

Symptoms.	Cause.*	Examples of disease.
Dysphonia .	Alteration in the vocal cords from thickening, ulceration, diminished tension, morbid growths, &c.	Acute and chronic laryngitis. Laryngeal phthisis. Papillomata, &c.
APHONIA .	to paralysis of some of the mus-	Swelling of arytenoid cartilages.
DYSPNŒA.	Narrowing of the orifice of the glottis.	Paralysis of muscles opening glottis. Laryngismus stridulus. Œdema, growths and cicatrices contracting rima glottidis, and pressure external to larynx.
STRIDOR .	Always accompanied by dyspnæa, and produced by the same causes.	
Сотен	Irritation of the laryngeal mucous membrane, or the nerves of the larynx.	In most laryngeal diseases. It is of a peculiar shrill, brazen character.

^{*} It must be understood that reference is here made only to laryngeal affections.

II.—SYMPTOMS OF ACUTE LARYNGITIS.

Local.	General.	Laryngoscopic examination	
Pain in the region of the larynx, increased by pressure externally, with dryness, soreness, and roughness felt internally, and a sense of constriction. Voice hoarse, cracked, and frequently lost. Cough hoarse, deep, hollow, or brazen like that of croup, paroxysmal, sometimes becoming aphonic, painful, attended with hardly any expectoration; sometimes dysphagia; dyspnæa in severe cases.	origin the disease is ushered in by chilliness, followed by more or less pyrexia. Full pulse and flushed face. If the disease advances unchecked, the countenance becomes anxious, or pale, or somewhat livid; pulse feeble and irregular, and the usual signs of carbonic acid.	Epiglottis sometimes so much swollen as to prevent an examination of the interior of the larynx. The mucous membrane covering the ary-epiglottic folds, ary-tenoid cartilages, cartilages of Santonini, ventricular bands, and sometimes even the vocal cords, is often	

III.—CHRONIC LARYNGITIS.

Sympt	toms.	Laryngoscopic examination.
Local.	General.	J. J. Sara-Para sanahan
	ance unless there exists complication in the lungs or elsewhere.	

LARYNGEAL PHTHISIS.

Symptoms.		Laryngoscopic examination.
Local.	General.	
Those of chronic laryngitis, with the addition of difficulty in deglutition and violent fits of coughing from food getting into the larynx. Dysphonia in the early, aphonia in the later stage; often great dyspnæa.	consumption.	At the commencement the same as in chronic laryngitis. Later on there is pyriform swelling of the ary-epiglottic folds, and a swollen condition of the cartilages of Santorini. Eventually there may be ulceration attacking any part of the mucous membrane.

The chronic laryngitis of syphilis cannot with certainty be distinguished from the other forms of chronic laryngitis without inquiry into the history of the case. In tertiary syphilis there is deep and extensive ulceration not necessarily preceded by thickening, the epiglottis is attacked early, the ulceration is often followed by cicatrisation and contraction, causing stenosis of the larynx.

IV.—REGIONS OF THE CHEST.

	1		
Region.	Contents.	Resonance on percussion in health.	Auscultation in health.
1. CERVICAL	Larynx and trachea.		Tracheal breathing aud voice.
2. Supra clavicular .	Apex of lung.	Clear.	Very pure vesicular murmur (scarcely audible); voice scarcely audible.
3. CLAVICULAR	Clavicles and vesicular structure of lung.	Clear.	Pure vesicular murmur and scarcely audible voice, except at the sternal end, where there are bronchial breathing and bronchophony.
4. Subclavian	Vesicular structure of lung.	Clear.	Pure vesicular murmur and scarcely audible voice. Heart sounds on left side below.
5. Mammary .	Vesicular structure of lung. Heart on left side.	Clear on right side. Dull on left, in greater part of region.	Pure vesicular murmur above. Heart sounds below on left side, and feeble vesicular murmur on right. Voice scarcely audible.
6. Infra-mammary	Anterior portion of base of lung. Stomach below, on left side, liver on right.	tic on left side;	Distant vesicular murmur. Voice scarcely audible.
7. Superior sternal		Clear.	Bronchial breathing and bronchophony.
8. Inferior sternal	Anterior mediastinum above. Stomach below.	Clear above; tym- panitic below.	Pure vesicular murmur above, becoming feeble below. Voice scarcely audible.
9. Axillary .	Vesicular structure of lung.	Clear.	Pure vesicular muruur. Voice scarcely audible.
10. LATERAL	Vesicular structure of lung.		Pure vesicular murmur. Voice scarcely audible.
11. Supra-scapular	Apex of lung.	Clear.	Purc vesicular murmur. Voicc scarcely audible.
12. Scapular .	Vesicular structure of lung.	Rather less clear.	Pure vesicular murmur. Voice scareely audible.
13. Inter-scapular	Roots of lung and large bronchi.	Clear.	Bronchial breathing and bronchophony.
14. Infra-scapular	Base of lung.	Clear.	Very pure vesicular murmur. Voice scarcely audible.

V.—PHYSICAL EXAMINATION.

Method of examination	n. Shows	Instruments used.
1. Inspection 2. Palpation (Application of the Hand.) Mensuration— (a) Of Size. (b) Of Movement.	Vibration communicated to the chest-wall by the voice (vocal vibration or vocal fremitus). Force of the heart's impulse. Occasionally certain morbid phenomena, as pleural and pericardial friction, valvular thrill. Comparative size of the two sides of the chest. Actual and comparative movement of the chest in respiration.	Graduated tape. Cyrtometer.*
AUSCULTATION (Character of respiratory mur-	rubber. The first and second fingers of the right hand will be found to be the best plessor. Pleximeter.—A thin plate of ivory or bone. The forefinger of the left hand will be found to be the best pleximeter. tethoscope.—Made of wood, metal, or vulcanite. The forefinger of the left hand will be found to be the best pleximeter. The forefinger of the left hand will be found to be the best pleximeter. The forefinger of the left hand will be found to be the best pleximeter.

Percussion may be—(1) Immediate.—Where the chest is struck directly, without the interposition of any pleximeter.

position of any pleximeter.

(2) Mediate.—Where an instrument termed a pleximeter is interposed between the chest and the substance with which the stroke is made. This may be either a thin plate of ivory or bone, or, still better, the first and second fingers of the left hand.

Auscultation may be—(1) Immediate.—Where the car is applied directly to the walls of the chest.

(2) Mediate.—Where the stethoscope is interposed between the car and the walls of the chest.

the walls of the chest.

^{*} See Note I in Appendix.

VI.—NORMAL RESPIRATORY SOUNDS.

Sound.	Situation where heard.
VESICULAR BREATHING .	All over the ehest except the upper part of the sternum and the space between the seapulæ, the inspiratory sound being louder, and three or four times longer, than the expiratory.
Puerile Breathing .	Is the loud vesicular breathing of children, audible over the same parts of the chest as in ordinary vesicular breathing.
BRONCHIAL BREATHING .	Upper part of the sternum and the space between the scapulæ in many healthy persons.
TRACHEAL OR BREATHING LARYNGEAL	Over the traehea and larynx.

NORMAL VOICE SOUNDS.

Sound.	Situation and character.
ORDINARY VOCAL RESONANCE	Is the voice sound heard over the pulmonary regions where vesicular murmur is audible. A muffled, diffused sound; the articulation of the voice is not appreciable.
NATURAL BRONCHO-PHONY	Heard over the upper part of the sternum and between the scapulæ in a certain number of healthy persons. A more distinct and concentrated sound than the last variety.
LARYNGOPHONY AND TRACHOPHONY	Voice-sounds heard over the laryux and trachea. Voice transmitted imperfectly articulated to the ear of the observer, with so much loud- ness and concentration as even to be painful.

VII.—ABNORMAL RESONANCE ON PERCUSSION.

Resonance.	Cause.	Examples of disease.
DIMINISHED in various degrees, or altogether Absent.	Deficiency of air in the lung beneath the part percussed, or solid or liquid matter between the walls of the chest and the lung containing air; or extreme distension of the chest with air.	Pneumonia, first stage. Phthisis; eontracted lung, with thickened pleura. Œdema and congestion of lung. Tumours. Collapse of lung. Pneumonia, second and third stages. Intra-thoracic tumours and ancurisms. Effusions into pleural cavity, or its extreme distension by air.
Increased .	Air increased in quantity, or air in pleural eavity.	Emphysema. Tubereular eavity, having thin walls, and situated near the surface.
TYMPANITIC .		Pneumothorax. Extreme emphysema.
Amphoric .	A large cavity (or eon-ditions resembling it)	Upper part of lung compressed by fluid below.
Box-like .	with very tense walls, containing air.	Pncumothorax. Cavities.
CRACKED-POT SOUND	Air expelled from eavity by sudden pressure.	Cavity of considerable size, with large bronehus opening into it, mouth of patient being open.

VIII.—MODIFICATION OF NORMAL RESPIRATORY SOUNDS.*

	Sound.	Chief causes.	Condition of organs.	Examples of disease.
NTENSITY.	FEEBLE BREATHING	Air entering the air- cells in diminish- ed quantity and force.		- Bronchitis. r Pneumonia, 1st stage. r Tumours. - Pleurisy. f Emphysema. n Pleurodynia.
I. CHANGES IN INTENSITY.	EXTINCT BREATHING	The presence of a non - conducting medium between the lung and the chest - wall, or some impediment to the entrance of air into the bronchi.	Lung solidified by pressure upon its surface; plug of mucus, fibrinous exudation, or foreign body in the bronchi, or tumour compres-	Plastic bronchitis. Tumours.
	PUERILE SUPPLEMENTARY BREATHING	Air entering the aircells with increased rapidity and force.		Disease of opposite lung or of other parts of the same lung. Met with as a normal condition in childhood.
IN RHYTHM.	INTERRUPTED JERKING COGGED-WHEEL	Respiratory movements restrained by pain, or mental emotion, or some temporary local obstruction of the air-tubes.	Varies with the disease causing it.	Pleurisy. Debility, with palpitation. Hysteria. Incipient phthisis.
II. CHANGES IN	PROLONGED EXPIRATION .		Thinning of the walls of the air vesicles, with dilatation and destruction of the alveolar septa.	
IN QUALITY.	Exaggerated Breathing .	Increased friction in the air-cells and smaller bronchial tubes.	Lung solidified or brouchial tubes	
III. CHANGES	BRONCHIAL BREATHING .	tubes, or in cavities of the lung.	Cavitics with dense walls.	Phthisis. Pneumonia. Tumours. Tubercular and other

^{*} See Note 2 in Appendix.

IX.—ABNORMAL RESPIRATORY SOUNDS (DRY).

Sound.	Situation.	Cause.	Example of disease.
Sibilus	Lesser bronehial tubes.	Vibration of thick mueus attached to the wall of the tube, or contraction of the tube, due either to swelling or spasm; not easily removed by cough.	Emphysema. Asthma.
Rhonchus	Larger bronehial tubes.	Vibration of thick mucus in tubes; generally easily removed by cough.	
	CLICKING OR	CRACKLING	
DRY CRACKLING .			
Humid Crackling	Smaller bronehi.		
PLEURAL FRICTION SOUND CREAKING SOUND .	\right\} Layers of pleura	pleura, rough-	effusion has com- meneed, or after absorption of the

X.—ABNORMAL RESPIRATORY SOUNDS (MOIST).*

	1	1	1
Sound.	Situation.	Cause.	Examples of disease.
CREPITANT RÂLE (Fine or pneumonic crepitation.)	Air-vesicles.	Opening up of collapsed air-cells, or separation of their adherent walls.	stage. Œdema of lungs.
Subcrepitant Râle (Medium crepitation.)	Smaller bronchial tubes.	Bursting of air-bubbles in fluid.	Collapse. Capillary bronchitis. Phthisical bronchitis. Resolution of pneumonia. Œdema of lung.
$(Large\ crepita-\ tion.)$	small or moderate- sized cavities.	Bursting of air-bubbles in fluid. Bursting of air-bubbles	Pulmonary apoplexy. Phthisis. Bronchitis. Hæmoptysis.
VERNOUS RÂLE. CHURNING SOUND.	number of small cavities). Lung in a state of	in fluid.	Bronchiectasis. Abscess of lung. Gangrene of lung.
	disorganisation. —ABNORMAL	SOUNDS (AMPHOR	IC).
SPLASH ON SUCCUS	Cavity of pleura or large cavity.	Sudden disturbance of air and fluid existing	Pneumothorax with effusion.
BELL SOUND.	Cavity of pleura.	together in the pleura. Auscultation of an air- containing cavity	Very large cavity.
		whilst an assistant uses two coins, one as a hammer, the other as a pleximeter.	
AMPHORIC ECHO AND METALLIC TINK-LING.	Cavities.	Vibration of air in large cavities with tense	cavities. Pneumothorax with
		râles and rhonchi in the chest, by the voice, and by the act of coughing; the latter	enusion.
		requires, in addition, a little fluid at the bottom of the cavity, set	
		in vibration by a mo- mentary impulse, such as the fall of a drop of fluid, and is essentially	
		tho echo of a bubble.	

^{*} See note 3 in Appendix.

XII.—ABNORMAL VOICE SOUNDS.

Sound of voice.	Character of sound.	Cause.	Examples of disease.
FEEBLE OR ABSENT VOCAL RESONANCE.	The obscure humming or buzzing noise heard over the normal chest either very feeble or altogether absent.	obstructed; non- conducting medium in pleura or rare- fied condition of lung.	ing, or foreign body in bronchus. Pneumothorax.
Exaggerated Vo- cal Resonance	Voice-sounds unaltered in quality or distribution, but louder and of greater intensity than natural.	or conducting power, due to consolidation	Dilatation of bronchi.
Вконснорному .	Voice-sounds heard louder, clearer, and more vibratory than natural, but unattended with articulation or tactile sensation to the ear.	sounding or conducting power.	Cavities due to phthisis or dilatation of the bronchi. Consolidation of the lung resulting from collapse, hæmorrhagic infarctions, pneumonia, phthisis, cancer, &c.
PECTORILOQUY .	Voice-sounds distinctly articulated and concentrated, and as if spoken into the end of the stethoscope.	cavity with dense walls.	Phthisis, dilated bronchi, &c.
Amphoric Resonance or Echo	A ringing metallic sound, resembling that produced by speaking into an empty jar.	The voice reverberating in a large cavity with a small aperture.	Pneumothorax.
Œ ворному	A tremulous vibratory sound resembling the bleating of a goat, or the nasal Punchinello voice.	with condensed lung	S1011.

XIII—ASSOCIATION OF PHYSICAL SIGNS.*

Percussion.	Auscultation of respiration.	Auscultation of voice.	$Vocal fremitus. \ \ $	Physical condition.
CLEAR	Vesicular murmur or its modification.	Normal vocal resonance.	Unimpaired.	Lung-tissue healthy or nearly so; at any rate, no increased density of lung-tissue from pressure.
Dull	Bronchial or harsh respiration.	Bronchophony	Increased.	Solidification of pul- monary structure.
	Absent respiration.	Absent voice.	Diminished or absent.	Effusion into pleural sac.
Tympanitic .	Cavernous or feeble according to cause.	Uncertain; cavernous or diminished.	Uncertain; mostly diminished.	Increased quantity of air within the chest, or air confined in particular points; states commonly due to a cavity, or to overdistension of the air-cells.
Amphoric or Metallic.	Amphoric or metallic.	Amphoric or metallic.	Mostly diminished.	Large cavity containing air, with elastic walls.
CRACKED- METAL SOUNDS	Cavernous respiration.	Cavernous voice.	Uncertain.	Generally a cavity communicating with a bronchial tube.

^{*} Taken from Da Costa's 'Medical Diagnosis.'

Disease.	Symptoms.	Physical signs.	Post-mortem appearances.
Acute Bronchitis: 1st or Dry Stage.	Chilliness, followed by frequent pulse and febrile symptoms; pains in limbs. Substernal pain. Hoarse dry cough. Feeling of oppression and tightness about the chest.	chal fremitus may be felt. Resonance on percussion unimpaired. Feeble vesicular murmur, mixed with rhonchus and sibilus. Puerile breathing in unobstructed parts of lung. Vocal resonance not	membrane of bron- chial tubes, with some degree of swelling and dry- ness of surface.
2nd or Moist Stage.	Cough, with expectoration of frothy, transparent mucus, mixed with air-bubbles of various sizes, and occasionally tinged or streaked with blood. Urgent dyspnæa, often amounting to orthopnæa. Lividity and febrile symptoms increased. Restlessness at night	chal fremitus may be felt. Resonance on percussion clear or only very slightly impaired. Feeble vesicular murmur mixed with rhonchus, sibilus, and mucous râles. Vocal	lapse when the chest is opened. The mucous membrane of the bronchi is red and swollen, and the tubes filled with
3rd Stage (Termina- tion favor- able).	ness at night. Gradual remission of the symptoms. Expectoration becomes thick, greenish, and opaque, and sometimes nummulated.	sibilant and mucous râles, with return of normal vesicular	_
(Unfavor- able).	Dyspnæa very urgent, signs of impending suffocation. Profuse cold sweats. Sinking, drowsiness, and delirium. Less cough, absence of expectoration.	of the 2nd stage tra- cheal râles may be heard.	_
CHRONIC BRONCHITIS	Two chief forms, the one characterised by the sputa being expectorated with great difficulty, consisting of small, grey, semi-transparent pellets, and tending towards emphysema; in the other	abdominal. Vocal fremitus not materially altered; rhonchal fremitus can generally be felt. Impairment of resonance or a hyperresonant note according as collapse of lung and	much congested, presenting a dark livid hue, with portions collapsed, and others emphysematous. Bronchial tubes frequently dilated. Mucous
and brought of the brone with this for comes on at with the his Dyspnea; liv some cases the	abundant, muco-purulent, up with ease; dilatation chi frequently associated m. The cough generally the approach of winter; tory of former attacks. Vidity of surface; and in esymptoms resemble those athisis, as wasting, with	consolidation or emphysema predominate, the former most marked at the bases, the latter at the anterior part. Feeble vesicular murmur. Rhonchus, silibus, and mucous râles. Vocal resonance varies.	membrane thick- ened, uneven, sometimes ulcer- ated, covered by a thick, puriform sc- cretion or sparingly coated by a tena- eious, glairy, semi- transparent sub- stance.

XV.—PHTHISIS.

Stage of disease.	Symptoms.	Physical signs.	Post-mortem appearances,*
PHTHISIS: Ist stage (incipient).	Cough at first dry, then with expectoration of mucus, frequently streaked or dotted with blood, or with copious hemoptysis. Dyspnea. Pains in various parts of the chest, especially on the affected side. Dislike to fatty articles, and other dyspeptic symptoms; tendency to vomiting after paroxysms of coughing. Night-sweats. Emaciation. In females, disturbance of the catamenial functions. Occasionally hectic.	Increased vocal fremitus.	semi-transparentino- dules, varying in size from a small pin's head to a hempseed; the lung-tissue around these nodules may be healthy, but is generally hyper- æmic and congested, slightly increased in density. In more ad- vanced cases, in ad- dition to the miliary nodules, there may be small, yellow ty. Both kinds may
2nd stage (confirmed).	Cough more severe, with puriform expectoration, of a yellow or greenish hue, and often bloody. Profuse	Greater diminution of movement of the affected side, and some amount of flattening. Increased vocal fremitus. Increased dulness, extending downwards. Bronchial breathing, mixed with mucous râles or with click at the end of each inspiration.	Commencement of caseation and softening in the consolidated portion, inflammation of the surrounding parenchyma, together with obliteration of the blood-vessels and
3rd stage (advanced).	with puriform(nummular) expectoration, or attacks of copious hamoptysis. Extreme emaciation and	Scarcely any movement of the affected side. Marked flattening. Increased vocal fremitus. Dulness less marked. Box-like rc- sonance or cracked-pot sound. Cavernous breath- ing, with gurgling and	Cavities of various sizes and forms, and either single or numerous, generally containing puriform fluid. Ulceration and dilatation of the bronchial tubes. Lung indurated and
Complications not restricted to any particu- lar stage of phthisis.	nia, or pleurisy; perforance pneumothorax; enlargement glands, or of those in the cular peritonitis; ulcerationally the ileum; fatty or ano; various forms of B	tion; bronchitis, pneumo- nation of the pleura, with not of the external absorbent chest and abdomen; tuber- tion of the intestines, espe- camploid liver; fistula in right's disease; diabetes; ingitis, or tubercle in the	GIOCUSC,

Incipient phthisis.

- 1. The cough commences gradually, without marked disturbance or coryza, often preceded by slight loss of flesh and strength.
- 2. The cough is generally dry and hacking at commencement, followed by the expectoration of a thin mucous fluid, which soon becomes thick and opaque or is slightly streaked with blood.
- 3. Examination by the microscope shows portions of lung tissue (yellow elastic fibres) in the sputa.
- 4. Pain of a wandering character about the chest, especially under the clavicles or between the shoulders.
- 5. Evening rise of temperature.
- 6. The morbid physical signs are usually confined to the upper lobe of the lung, and are often confined to one side of the chest; they are very persistent, and even, if met with on both sides, at first, are apt to subside partially or wholly on one side, whilst they continue, or even increase on the other.
- 7. The family history and general appearance of the patient may assist in arriving at a definite conclusion. Most frequent about puberty.

Bronchitis.

- 1. The cough commences suddenly, and is usually ushered in by feverishness and coryza.
- 2. The cough is accompanied by expectoration almost from the first; generally abundant; frothy or muco-purulent; not often blood stained.
- 3. No evidence of destruction of lung tissue on microscopic examination.
- 4. A feeling of tightness and rawness behind the sternum, aggravated by coughing.
- 5. Elevation of temperature not particularly marked at night.
- 6. The morbid physical signs usually predominate in the lower lobes, and exist equally on both sides of the chest; they are of temporary duration, and subside gradually and equally on both sides of the chest.
- 7. No marked hereditary tendency, and not confined to any particular time of life.

XVII.—ASTHMA.

Symptoms. There may be premonitory Chest greatly distended, As asthma is essensymptoms, such as gradually increasing dyspnœa or the passing of a large quantity of limpid urine; but the attacks usually come on suddenly at an early hour in the morning; the patient awakes in a start, with a sensation of suffocation and oppression at the chest; he either sits upright in bed, or sometimes stands holding on to some piece of furniture, so as to bring into play the accessory muscles of respiration. Countenance pale and anxious; in bad cases. cyanotic. Skin covered with sweat; the extremities cold. Pulse frequent and feeble. The attacks generally terminate with the expulsion of tough, ashy-grev pellets of mucus.

Physical signs.*

Post-mortem appearances.

though there is scarcely any expansile movement. Recession of the intercostal spaces, suprasternal, and supra-clavicular fossæ and epigastrium during inspiration, which is short and jerky, while expiration is prolonged and wheezing. Vocal vibration not markedly affected. Rhonchal fremitus may be felt. Resonance on percussion increased all over the chest. Almost complete absence of vesicular murmur. Every variety and kind of sibilus and rhonchus, whistling, squeaking, cooing, snoring sounds, and occasionally mucous râles towards the termination.

tially a neurotic disease, and to spasm of the muscular fibres of the bronchial tubes. and as a fatal result very rarely, if ever, occurs as direct consequence of the disease, the appearances found after death are principally the result of chronic bronchitis and emphysema. with dilatation of the right side of the heart.

^{*} It must be borne in mind that the physical signs of asthma change their seat with considerable rapidity, a quarter of an hour being quite sufficient to cause breathing sounds to reappear where before they had been absent, and vice versa.

Discase.	Symptoms.	Physical signs.	Post-mortem appearances.
Emphysema (Vesicular).	sional paroxysms of urgent dyspnœa, most frequently supervening on eatarth. Cough, with or without expectoration of thin, transparent, frothy mucus. In the last stage of the disease there are symptoms due to interference with the circulation, as palpitation, eyanosis, general dropsy, and congestion of the abdo-	almost circular. Sternum projecting forwards. Scapulæ and clavicles raised and ill-defined. Ribs more horizontal and intercostal spaces widened. Respiration abdominal. Movement of chest much diminished. Heart beating in the epigastric region. Resonance on percussion greatly increased or tympanitic. Feeble inspiration, prolonged expiration, the former wheezing, the latter generally with rhonchus or sibilus. Vocal fremitus and	opened, but, on the contrary, may rise up and bulge out of its cavity. It is pale and anæmie, and does not crepitate when pressed, but feels soft and downy, and is drier than ordinary. The air-cells are dilated, or several have become one cavity from the rupture of the septa between them. Cells vary from the size of a millet-seed to that of a swan-shot, or larger.
Emphysema (Interlobular).	oppression, generally occurring suddenly after some violent effort, the subcutaueous areo-	Percussion tympanitic over the affected part. becoming ædematous.	Bead-like bubbles of air seen through the pleura, or partitions between the lobules much widened. Sometimes air is found beneath the areolar tissue of the neck.
D		PNEUMOTHORAX.	la 11 1 1 •
PNEUMOTHORAX.	bing pain, with the sensation of something having given way. Urgent dyspace and evidences of shock. More or less cyanosis. Posture assumed by patient varies. Pulse frequent, weak, and small. Respiration may be 40 to 60 in the minute Troublesome cough without expectoration. In some cases of phthisis, or where there are extensive pleural adhesions, pneumothorax has come on quite im-	with obliteration or bulging of the intercostal spaces. Movement on respiration diminished or absent. Increased elasticity of the walls of the chest. Feeble or absent vocal fremitus. Clear tympanitic resonance on percussion. If the amount of air is extreme there may be dulness. No true vesicular murmur; bronchial breathing may be heard along the spine. Amphoric sounds, with inspiration, voice, and cough, also a metallic echo; the bell-sound may be elicited. The viscera are displaced to a variable degree.	bound down by old adhesions to some other part of the chest wall. The gas is composed chiefly of carbonic acid and nitrogen, and contains but little oxygen, and occasionally some sulphuretted hydrogen.
PNEUMOTHORAX (with effusion).	perceptibly, and lia	only been discovered on mak Same as in true pneumothorax, except that percussion is dull in the lower part of the chest, and tympanitic above the level of the fluid. Metal lic tinkling and splashing sound on succussion are also frequently heard.	Lung collapsed. Air, mixed with fluid, in pleural cavity. Mostly arises as a termination of phthisis, a superficial cavity becoming ruptured. May occur in pneutured.

XX.—PNEUMONIA.*

Disease.	Symptoms.	Physical signs.	Post-mortem appearances.
PNEUMONIA: 1st Stage.	Single, scvere rigor (or convulsions in children), followed by heat of skin.	ment on the affected side. Respi-	and bloody serum. Dark-red colour
(Engorgement.)	Increased frequency of pulse. Respiration greatly accelerated, with consequent disturbance of the pulse-respiration ratio. Dyspnæa. Pain in the side, increased by cough or deep inspiration. Cough, at first dry, with rusty sputa about the second or third day. Inability to lie on affected side. Dilating alæ nasi. Herpes about lips. Frontal headache.	Vocal fremitus normal. Percussion note not materially affected. Feeble vesicular breathing. Fine	externally, and on section. Crepitating less and heavier than sound lung, but still floating in water. Pulmonary tissue slightly softened.
2nd Stage. (Red hepatisation.)		Very slight movement. Vocal vibrations well marked. Dulness on percussion. Tubular breathing and bronchophony, generally accompanied by some râles, if at the commencement of the 2nd stage of a crepitant character, and afterwards of a mucous nature.	or mottled and granular on cut surface, and of liver-like solidity. Easily torn, and with fluid exuding on pressure less abundant than in first stage, but thicker, and towards the end of this stage becoming purulent. Not crepitating, and
3rd Stage. (Gray hepatisation.)	Aspect much distressed. Face pale and livid. Great failure of vital powers. Hectic and delirium. Cough continues, and the sputa are either absent, or sometimes they remain rust-coloured; at others becomes purulent or dark like pruncjuice, thin and fetid.	Absolute dulness on percussion. Tubular breathing and bronchophony, frequently with gurgling râles where the lung is disorganised.	sinking in water

^{*} See Note 5 in Appendix.

XXI.—PLEURISY.

Disease.	Symptoms.	Physical signs.	Post-mortem appearances.
PLEURISY: 1st Stage, or Stage of Hyperæmia.	Rigors, or more frequently mere chilliness. Sharp, stabbing pain in theside, increased by deep inspiration or cough, accompanied generally with some tenderness on pressure. Breathing short and hurried. Respiration chiefly abdominal, with inability to lie on the affected side. Short, dry cough. Pulsefull and bounding. Febrile symptoms.	may sometimes be felt. Percussion sound not materially altered. Vesicular murmur feeble and jerking in rhythm. To-and-fro friction sound.	drier than natural, roughened and high- ly vascular, and pre- senting a close net-
2nd Stage, or Stage of Effusion.	Cough, dyspnæa, sense of weight and fulness of the affected side. Febrile symptoms less marked Patient lies toward, not on the affected side. Complexion inclined to be dusky.	duly prominent, the intereostal spaces being obliterated or even bulging. Integuments occasionally edematous. Vocal vibrations ab-	puruleut, mixed with shreds of ereamy lymph, in the eavity of the pleura. Lungs pushed upwards and backwards towards the spine, its surface coated with a
(Empyema).	More decided febrile disturbance of a heetic type night sweats. Morning remissions and evening exacerbations. Face puffy and semi-transparent Clubbing of the fingerends. If pointing in wardly, abundant purulen sputa.	posture. Heart pushed over to sound side, and diaphragm pushed down, so that the liver and stomach descend lower into the abdomen than in health. Vesicular murmur almost, or quite absent. Frequently bronchia breathing along the spine. Pue-	the same kind as that mixed with the fluid. The lung eollapsed and earnified.
3rd Stage (Resolution after Effusion).	Gradual diminution of the cough, dyspnea, and othe symptoms. Returning ability of the patient to lie of the sound side. Gradua return of displaced organ to their normal position.	 vibration and frietion fremitus The dulness on percussion diminishes from above downwards 	of long duration the lung remains carnified and bound down by adhesions, and the chest-wall undergoes retraction or depression, the ribs overlap and there is more or less lateral curvature of the dorsal spine towards the diseased, and of the lumbar towards the healthy side.

XXII.—DIAGNOSIS BETWEEN PLEURISY WITH EFFUSION AND PNEUMONIC CONSOLIDATION.

Pleurisy.

Begins with

- 1. Chilliness or several slight rigors.
- 2. Sharp, catching, stitch-like pain in the side.
- 3. Cough dry or with a little mucous expectoration, very painful, and repressed by patient.
- 4. Pyrexia is not great, and the skin may be moist.
- 5. Excretion of chlorides not affected.
- 6. Pulse-respiration ratio not affected.
- 7. Affected side rounded; intercostal spaces bulge; displacement of licart.
- 8. Feeble or absent vocal fremitus.
- 9. Absolute dulness on percussion, transgressing the median line in front.
- 10. Feeble or absent vesicular breathing; bronchial breathing at the root of the lung.
- 11. Vocal resonance absent, sometimes ægophonic.

Pneumonia.

Begins with

- 1. A single severe and protracted rigor.
- 2. Pain does not catch the breath, more of a dull character.
- 3. Cough frequent and severe, with rusty viscid expectoration.
- 4. Great febrile disturbance, skin hot and pungent.
- 5. Diminution or absence of chlorides in urine.
- 6. Pulse-respiration ratio may fall to two to one.
- 7. No alteration in the shape of the chest or of the intercostal spaces; heart not displaced.
- 8. Vocal fremitus usually much intensified.
- 9. Less intense dulness, not transgressing the median line.
- 10. Marked tubular breathing, often of a metallie character.
- 11. Loud bronehophony.

XXIII.—PRÆCORDIAL REGION.

Region.	Situation.	•
APEX OF HEART	Between fifth and sixth ribs on left side, about two inches below the nipple and one inch on its sternal side.	rifice ext th orific monar
Base "	On a level with the third costal cartilages.	ary, nitral
TRICUSPID ORIFICE .	Extends from the junction of the fourth left eostal cartilage with the sternum, behind that bone to the articulation of it with the sixth right eartilage.	t the push is t invard
MITRAL ORIFICE	To the left of the tricuspid valves, immediately behind the fourth eostal cartilage.	bered tha al, then t st of all vye dowr then the aspid.
PULMONARY ORIFICE .	Immediately behind the left border of the sternum at the junction of the third eostal eartilage with that bone.	t be rememberest superficial, the and deepest of from above comes first, then the tricuspides.
AORTIC ORIFICE	About half an inch lower than and to the right of the pulmonary orifice, behind the sternum, on a level with the third interspace.	Let it be remembe the most superficial, aortic, and deepest Ranged from above orifice comes first, the

PHYSICAL EXAMINATION OF PRÆCORDIAL REGION.

Examination by			Shows
Inspection .		•	Form of chest. Point at which the apex of the heart strikes the wall of the chest. Regularity of impulse, and extent over which it is perceptible.
PALPATION .			Force and regularity of impulse. Presence or absence of purring tremor or of friction fremitus.
Percussion.			Extent and intensity of præcordial dulness.
Auscultation			Character of rhythm. ,, sounds, normal or abnormal.

AREA OF SUPERFICIAL CARDIAC DULNESS.

Is roughly triangular in shape, the right side of the triangle being the midsternal line from the level of the fourth chondrosternal articulation downwards; the hypotenusc being a line drawn from the same articulation to a point immediately above the apexbeat; the base being a line drawn from immediately below the apex-beat to the point of meeting between the upper limit of liver dulness and the midsternal line (Dr. GEE).

XXIV.—SOUNDS AND IMPULSE OF HEART.

-				<u> </u>	1
Sound.	Character.	Point of greater intensity.	Cause.	Time.	Condition of circulation.
FIRST SOUND (Systolic).	Dull and prolonged.	Fourth and fifth intercostal spaces just within left nipple line.	auriculo-	4 1 0	Contraction of ventricles, dilatation of auricles. Closure of auriculo - ventricular valves, openness of arterial valves; propulsion of blood into the arteries. Impulse of the heart immediately followed by pulse at the wrist.
FIRST PAUSE	•••	•••	•••	1 0	Auricles dilating.
SECOND SOUND (Diastolic).	Short and clear.	Base of heart, opposite the third costal cartilage.	Sudden closure of the aortic and pulmonary valves.	300	Dilatation of both auricles and ventricles. Closure of arterial valves, opening of auriculoventricular valves.
SECOND PAUSE.	•••	•••	•••	3 10	Complete distension of auricles, followed by their contraction, and distension of ventricles. Auriculo - ventricular valves open, arterial valves closed.
IMPULSE.		about one and a half or two inches below the nipple.	In part duc to the tilting upwards of the apex, but chiefly to the change in shape of the heart, which during the systole becomes harder and more globular, and bulges forwards.		

XXV.—ENDOCARDIAL MURMURS.

Time.		Situation.	Orifice.	Nature.
	1 . 2 . 3 . 4 . 1 . 1 .	Basic. ,, Apical. ,, Basic. Apical.	Aortic. Pulmonary. Mitral. Tricuspid. Aortic. Mitral.	Obstructive. Regurgitant. ,, Obstructive.

Pulmonary regurgitant murmur (diastolic) and tricuspid obstructive murmur (presystolic) are very rarely met with clinically, and for all practical purposes they may be disregarded.

The most frequent combination of these murmurs are—

- 1. Combined aortic obstruction with regurgitation.
- 2. Mitral obstruction and regurgitation.
- 3. Various combinations of the two preceding forms, the aortic and mitral valves being both discased.
- 4. Mitral obstruction with dilated right ventricle, and conscquently tricuspid regurgitation (Dr. AITKEN).

Order of frequency of endocardial murmurs, commencing with the most common:—

- 1. Mitral regurgitant.
- 2. Aortic constrictive.
- 3. Aortic regurgitant.
- 4. Mitral constrictive.

- 5. Tricuspid regurgitant.
- 6. Pulmonary constrictive.
- 7. Pulmonary regurgitant.
- 9. Tricuspid constrictive.

Order of relative gravity:—

Tricuspid regurgitation.

Mitral constriction and regurgitation.

Aortic regurgitation.

Pulmonary constriction.

Aortic constriction.

"Estimated not only by their ultimate lethal tendency, but by the amount of complicated miseries they inflict."—Dr. Walshe.

XXVI.—AORTIC

	Obstruction.	Incompetence.
Effect on heart	Hypertrophy of left ventricle.	Hypertrophy and dilatation of left ventricle.
Apex displaced	To left.	Downwards and to left.
Cardiac dulness in- creased		Downwards and to left, more increased than in obstruction.
Impulse	Forcible.*	More forcible than in obstruction and over wider area.
,, where?	To left of sternum.	To left of sternum.
Murmur, its direction	Onward, ventriculo-aortic.	Backward; aortic-ventricular.
Murmur, time	Systolic; loudest at begin- ning of systole.	Diastolic; post-systolic; loudest at beginning of diastole.
Point of greatest in-	Right border of sternum, in	Right border of sternum opposite
tensity	second intercostal space.	third intercostal space.
Direction in which	Upwards to right sterno-	Downwards along sternum and
propagated	clavicular articulation.	towards apex.
Character of sound	Loud, harsh, or blowing.	Of higher pitch than in obstruc-
(very uncertain		tion, and loudness decreases
and of little value		rapidly from commencement.
for diagnosis)		
	Replaces first at base.	Replaces second at base, and oc-
heart sounds		cupies more or less of the pause.
		Apparent intensification of pul-
sound †	valves, but aortic second	monary second.
	sound generally feeble.	
Thrill	Systolic; in second right	Down sternum; diastolic.
Vicat on mula-	intercostal space.	Visible pulsation in arterics (loco-
Effect on pulse—	NT. 1 1 1 1	motive pulse).
Frequency Volume		Normal, or perhaps decreased.
Power	Diminished.	Increased.
Rhythm)) D 1	2)
Duration	Regular. Slow.	Regular.
		Quick.
o one an tendency to	nectoris often anguna	As in obstruction, but sudden
	pectoris often present.	death more common than in any
		other form of valvular disease.

^{*} See note 6 in Appendix.

[†] See note 7 in Appendix.

XXVII.—MITRAL

Obstruction.	Incompetence.	
of left auricle and right	Hypertrophy and dilatation of all four chambers.	
To left and slightly down-	To left and downwards.	
To right of sternum, also to left at base, greatly.	To right of sternum, and also to left and downwards.	
fused.		
enigastrium.	diac region.	
cular.		
est at termination of dias-		
A little within and upwards	A little outwards and upwards from apex-beat.	
Upwards and inwards to- wards right base.	Upwards towards left base, and backwards into axilla, and behind.	
	Blowing, bellows murmur.	
first at apex, which is		
Intensification of pulmonary second.	Intensification of pulmonary second.	
Præsystolic; upwards and inwards from apex.	At apex and towards axilla.	
Increased.	Increased.	
Diminished. Diminished greatly.	Somewhat diminished. Diminished a little.	
Very irregular.	Somewhat irregular. Nearly normal.	
Pulmonary and venous congestion and slow death by asphyxia.	As in obstruction.	
	Hypertrophy and dilatation of left auricle and right chambers. To left and slightly downwards. To right of sternum, also to left at base, greatly. Feeble, undulating, and diffused. To right of sternum and in epigastrium. Onward; auriculo-ventricular. Diastolic, præsystolic, loudest at termination of diastole. A little within and upwards from apex beat. Upwards and inwards towards right base. Generally rough and harsh. Immediately precedes the first at apex, which is often very loud. Intensification of pulmonary second. Præsystolic; upwards and inwards from apex. Increased. Diminished. Diminished. Diminished greatly. Very irregular. Quick. Pulmonary and venons congestion and slow death by gestion and slow death by	

XXVIII.—PULMONARY OBSTRUCTION.

Murmur—its direction time . Onward, ventriculo-aortic.

Systolic.

Point of greatest intensity Left border of sternum, in second interspace.

Cause . . . Generally anæmic. May be due to pressure of solidified lung (phthisical or pneumonic) upon the artery. Rarely organic, and then usually congenital.

Associated signs . . Frequently bruit de diable in the jugular veins.

TRICUSPID REGURGITATION.

	Backward, ventriculo-auricular. Systolic.		
Point of greatest intensity	Base of ensiform cartilage.		
Cause	Generally secondary to disease of lung or of left side of heart.		
Associated signs	Systolic pulsation of the distended jugular veins.		

XXIX.—PERICARDITIS.

Stage.	Symptoms.	Physical signs.	Post - mortem
lst stage (inflamma-	If occurring during the course of	Greater extent of visible impulse than natural, and on	Pericardium is dry, inflamed, and has
tion without effusion.)	aeute rheumatism the disease may eome on insiduously. Pain and tenderness in the cardiae region. Palpitation. Increased frequency of the pulse. Shortness of breath. Anxiety. Pyrexia.	palpation the impulse is found to be more forcible, but uncqual. Friction fremitus rare. Area of dulness not altered. Single or double frietion sound, often preceded by a cantering* action of the heart. Heart sounds may be unchanged or even louder than in health, or they may be masked by the friction sounds.	lost its polish. Exudation of lymph on both surfaces, but more on the visceral. The membrane may have a shaggy appearance.
2nd stage (with effusion).	Less pain. Pulse small, frequent, and sometimes irregular. Dyspnæa and often orthopnæa. Irritable cough. Loss of voice. Dysphagia. Fulness of veins in the neck. Duskiness of complexion. Great auxiety. Sleeplessness. Delirium.	undulatory. On palpation, feeble and sometimes not perceptible; irregular. Area of cardiac dulness increased, first noticed at the base of the heart, and afterwards extending to left of apex beat, increased by the recumbent posture. Heart sounds feeble, distant and muffled at apex, louder and more superficial at base Friction may or may not be heard.	quantity in the sac of the perieardium. Usually sero - fibrinous, containing floeuli of lymph. It may be purulent or blood stained.
3rd stage (resolution)	A gradual subsidence of the symptoms of the second stage.	Diminution of the dulness from above and laterally.	dium with or without adhe-

^{*} See note 8 in Appendix.

XXX.—DIAGNOSIS BETWEEN ACUTE ENDOCARDIAL AND EXOCARDIAL SOUNDS.

Endocardial.	Exocardial.	
	1. A creaking, rubbing, rough, to-and- fro sound, intensified by pressure of the stethoscope and by the patient bending forwards.	
2. A thrill may be felt on palpation.	2. On palpation friction fremitus may be felt.	
3. The sound appears distant.	3. The sound appears near.	
4. May exist only with the systole or the diastole.	• •	
5. Accompanies the heart sounds.	5. Does not correspond with the rhythm of the heart.	
	6. Confined to the region of the heart and limited to site of production.	
7. Persistent character.	7. Rapid and frequent change in character; here to-day and gone to-morrow.	
8. Area of cardiac dulness not altered.	8. Increased area of dulness, if fluid be also present.	

APPENDIX

- 1. Dr. Gee describes the cystometer of Woillez as consisting "of a number of small pieces of whalebone rivetted together so as to form two jointed girths, which may be accurately applied to the two sides of the chest, and which are easily fastened and unfastened before and behind by a simple arrangement," but he suggests that "a cheap and perfect cyrtometer may be made by two pieces of composition gas-pipe, drawn out to a diameter of the eighth of an inch, and united by a piece of caoutchouc tubing." I generally use myself an instrument made for me by Mr. Hawksley, of Oxford Street; it consists of two narrow bands of pewter united by a piece of elastic webbing. I find that this answers better than the tubing, especially in fat people, as it lies flatter on the chest.
- 2. In discussing the respiratory movement allusion must be made to that peculiar type of respiration which goes by the name of the "Cheyne-Stokes respiration." Dr. Stokes gives the following description of it:— "It consists in the occurrence of a series of inspirations, increasing to a maximum, and then declining in force and length, until a state of apparent apnœa is established. In this condition the patient may remain for such a length of time as to make his attendants believe that he is dead, when a low inspiration, followed by one more decided, marks the commencement of a new ascending and then descending series of inspirations." It has been met with in various diseases of the heart and in affections of the nervous system.
- 3. Among doubtful râles Dr. Gee mentions "the dry crepitant râle with great bubbles, as Laennec named a sound resembling that produced by

inflating a dried bladder, and probably really due, as he supposed, to distension of the enlarged air-sacs of emphysematous lung."

- 4. It is impossible in a tabular form to give a description of all the post-mortem appearances likely to be met with in a patient dying when the physical signs are such as I have indicated under the head of the first stage of phthisis; I have therefore described the changes met with in the tubercular form. When the disease is of an inflammatory origin, occurring as a sequel to an attack of croupous or catarrhal pneumonia, the morbid appearances are not so frequently confined to one apex, and consist in a softening liquefaction, or caseation of the inflammatory products.
- 5. This table solely refers to acute, lobar, or croupous pneumonia, and has no reference to catarrhal or lobular pneumonia.
- 6. According to Traube ('Collected Works,' vol. ii, p. 831) in aortic stenosis there is deficient and not a heaving impulse, as is usually stated.
- 7. For the sake of clearness the murmurs are tabulated separately, but it must be borne in mind that aortic stenosis is generally combined with a certain amount of regurgitation, and a presystolic murmur very often passes indistinguishably into a systolic murmur.
- 8. Cantering action of the heart, besides being met with in commencing pericarditis, is also caused by reduplication of the first or second sound of the heart, or by an abnormal impulse of the heart against the thoracic wall at the moment of diastole, generally due to pericardial adhesions.





